

FRANCIS CRICK INSTITUTE – BIODIVERSITY NET GAIN ASSESSMENT

RPS was commissioned by the Francis Crick Institute to undertake an assessment of Biodiversity Net Gain (BNG), of the level 5 and level 2 terrace works, in support of the upcoming planning application. The subsequent assessment and report was carried out by Hannah Knight MSc MCIEEM, Principal Ecologist.

Biodiversity Net Gain Definition and Methods

Biodiversity Net Gain is defined in Baker *et al* (2019)¹ as:

"Development that leaves biodiversity in a better state than before"

The requirement for developments to seek to achieve BNG arises from the National Planning Policy Framework (NPPF), which states in Para. 174 that:

"Planning policies and decisions should contribute to and enhance the natural and local environment by ... minimising impacts on and providing net gains for biodiversity."

There is no single set method for quantifying the assessment of BNG, but one method is the use of biodiversity calculators to assess the biodiversity value of habitats pre- and post-development based on habitat type, distinctiveness and condition.

A biodiversity index is derived for the baseline and for the proposed development, and BNG is considered to be achieved where an increase in value is delivered (on or offsite), and where habitats of a higher value are not replaced exclusively with habitats of a lower value.

Defra made available its beta test update of its BNG assessment tool (version 3) in July 2021. This tool has been used for the assessment in this report. The tool and associated documents were downloaded from <http://publications.naturalengland.org.uk/publication/5850908674228224>

Planning Policy

Biodiversity and biodiversity net gain are now important consideration in the planning process and there is an expectation that developments should result in a 10% uplift in biodiversity over the existing situation.

Within the London Plan 2021, Policy G6 relates to both biodiversity and access to nature. The policy sets out that:

D. Development proposals should manage impacts on biodiversity and aim to secure net biodiversity gain. This should be informed by the best available ecological information and addressed from the start of the development process.

r, J., Hoskins, R. & Butterworth, T. (2019). *Biodiversity Net Gain – good practice principles for development*. Ciria, London.

Having regard to this requirement, the applicant's ecology advisor liaised in the pre-application stages with the Council's ecologist to ensure that the approach satisfied the Council's requirements under both the London Plan and the Camden Local Plan, plus Camden's Supplementary Planning Guidance.

The Camden Local Plan (2017) Policy A3 Biodiversity outlines that the Council will protect and enhance sites of nature conservation and biodiversity. The Council will assess developments against their ability to realise benefits for biodiversity through the layout, design and materials used in the built structure and landscaping elements of a proposed development, proportionate to the scale of development proposed.

Camden also has supplementary planning guidance on this issue in a Camden Planning Document dated 2018. This document must also be taken into account given it is a material consideration. The CPG sets out that applicants are expected to consider opportunities to improve biodiversity for proposal sites and its contents should be considered throughout the planning application process.

No specific BNG enhancement target is set within local policy, albeit that the Environment Act 2021, will mandate BNG, to ensure new developments deliver at least a 10% increase in biodiversity, using the DEFRA Metric. It is anticipated that the government will consult on the biodiversity net gain statutory instruments and regulations late 2021 and publish their response in the spring of 2022. It is therefore expected that the *mandatory* 10% net gain requirements will be in place late 2023.

Biodiversity Net Gain Assessment

The baseline for assessment of BNG used the Phase 1 Habitat Survey for the site produced as part of the original Preliminary Ecological Appraisal (RPS, September 2021). This report identified that the level 5 terrace comprised a biodiverse roof, with a small area of hardstanding (for maintenance purposes), whilst the level 2 terrace comprised solely hardstanding (paved).

The extent, distinctiveness and condition of the baseline habitats present on site is provided in the BNG excel spreadsheet, attached to this assessment, but is also detailed below, for ease of reference.

Description of pre-development habitats

Level 5 Terrace

Biodiverse (Extensive) Roof

The terrace on level 5 had, as part of the development of the Francis Crick Institute (planning approval: 2010/4721/P), been set-aside as a biodiverse roof; predominantly to provide habitat for black redstarts. However, owing to the height of the building and elevation of the level 5 terrace, part of the roof had failed to establish due to a lack of sunlight and the prevailing wind directions.

Species that were present on the unshaded part of the roof included ragwort *Jacobaea vulgaris*, yarrow *Achillea millefolium*, thistle *Carduus sp.*, chickweed *Stellaria media*, ribwort plantain *Plantago lanceolata*, bladder campion *Silene vulgaris*, sedums *Sedum sp.*, poppy *Papaver sp.*, geranium *Pelargonium sp.*, and bristly ox tongue *Helminthotheca echioides*. Two log piles were present, although considering the isolated nature and limited vegetation on the roof, these are not considered to provide the desired result for species.

Notwithstanding the above, in line with discussions between the project ecologist (RPS) and the Council's ecologist, it was agreed that the condition of the roof should be taken to be that of which *should* be present, if the habitat had succeeded as originally intended, under the original planning approval, rather than the poorer condition that it was now demonstrating.

Based on that approach, the extensive brown roof would meet the following criteria:

- Invasive, non-native species cover less than 5% of the total vegetated area; and
- There is a diverse range of species, providing nectar sources for insects.

It would not meet the following:

- Vegetation structure is varied. A single ecotone should not account for more than 80% of the total habitat area.

Based on the above, the extensive brown roof would be awarded a moderate habitat condition. However, as the conditions do not favour the establishment of the extensive green roof system (nor is it likely they would ever, owing to the wind and heavy shading), and therefore, RPS considered the grading of the roof to fall within the *'fairly poor'* category as a result.

Developed Land

The remaining habitats on site comprised hardstanding, which was a maintenance strip surrounding the perimeter of the roof.

Level 2 Terrace

The level 2 terrace was comprised solely of paved hardstanding originally intended to be used as an amenity area but never utilised as such. No vegetation was present on this level at all although the Crick has indicated its intent to utilise this space as originally proposed, and this includes the location of planters and vegetation designed to contribute to the Crick's wider BNG enhancements associated with these proposals.

Description of proposed habitats with biodiversity benefits and outline management

Level 5 Terrace

Of the 200m² covered by the level 5 terrace, a small portion of this will remain as hardstanding, comprising the maintenance walkway and new café / kiosk. The remaining habitats will comprise a combination of the retained biodiverse roof, and new planting, chosen specifically to aid biodiversity. These habitats are described in more detail, below.

Retained (extensive) biodiverse roof

The scheme has been designed with the retention of the existing biodiverse roof in mind, and ensures that the roof will still function, in both of in terms of its biodiversity and drainage (see separate report).

The retained biodiverse roof will sit below a metal grate system (for details, refer to the full planning pack) and be replanted with the species mix which failed to properly establish under the previous permission. Regular watering, monitoring and weeding will be carried out as needed within the first year, to give this habitat the best chance of a successful re-establishment.

These areas will be monitored on an annual basis for the first five years following establishment, to ensure they are performing as intended. If, any remediation actions are required. It may be that

the species mix needs to be adjusted, to provide species which are more tolerant to wind and shade; and this will be discussed with the maintenance team after the first year.

Enhanced (intensive) biodiverse roof

Select areas of the existing biodiverse roof will be enhanced, with the aim of providing a more intensive green roof and planted with a range of groundcover and grass species (similar to wildflower mounds), as outlined in the landscaping plans (RPS drawing no JSL3923_005). It is expected these areas will grow up through a wider metal grate system (again, for full details refer to the planning pack).

Species here have been chosen to be of specific benefit to wildlife and include a range of pollinators. The management of these areas will include regular watering and maintenance, to ensure establishment of the intended species, along with periodic weed removal (as necessary). These areas will be monitored on an annual basis for the first five years following establishment, to ensure they are performing as intended. If, any remediation actions are required, a report will be prepared by RPS ecologists / landscape architects and implemented by the Francis Crick Institute.

On the assumption that these areas will meet the following criteria, they are given a habitat condition of *fairly good*.

- Invasive, non-native species cover less than 5% of the total vegetated area;
- There is a diverse range of species, providing nectar sources for insects;
- Vegetation structure is varied. A single ecotone should not account for more than 80% of the total habitat area.

Introduced planting

Areas of introduced planting will be included along the southern boundary of the level 5 terrace. These areas include species which have been chosen with biodiversity in mind and include a variety of pollinators (both native and non-native). Introduced planting is, by default, given a habitat condition of poor.

Level 2 Terrace

Introduced planting

Areas of introduced planting will be included around the boundaries of the level 02 terrace. These areas include species which have been chosen with biodiversity in mind and include a variety of pollinators (both native and non-native). Introduced planting is, by default, given a habitat condition of poor.

Summary

The site, pre-development comprised of a biodiverse roof and hardstanding, and was given a pre-development score of **0.06** biodiversity units.

The post-development plans for the site include the retention and making good of the existing, retained biodiverse roof; the planting of new select areas intensive green roof areas, and shrub planting. Taking all of this into consideration, the outcome is a gain of **+5.34%**.

The establishment and ongoing management of the site should be monitored via an annual biodiversity audit, with any remedial actions noted and carried out by the relevant parties.

Our ref: Francis Crick Institute



In order for the site to achieve a 10% BNG, it is recommended that further enhancements are made outside of the application (level 5) boundary, but within the ownership boundary of the Francis Crick Institute.

An area where this could be achieved is the Ossulston Street gardens. By utilising half of the garden area (circa 0.015 ha), and replacing the current planting with a small, species-rich meadow, would ensure the development delivers a gain greater than 10%.

A handwritten signature in blue ink, appearing to read 'HKIGW', is written over a faint circular stamp or watermark.

HK
March 2022

Our ref: Francis Crick Institute

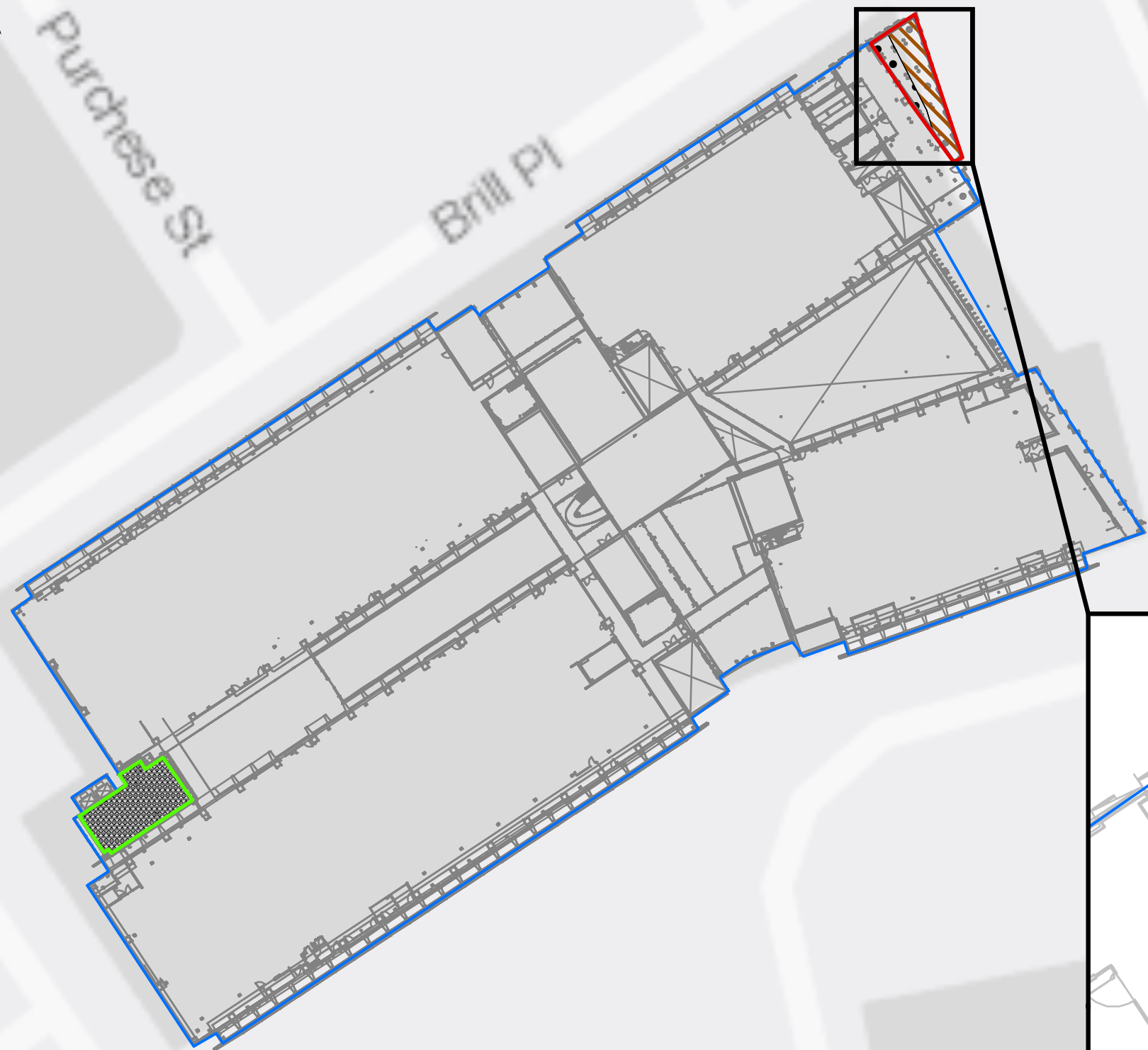
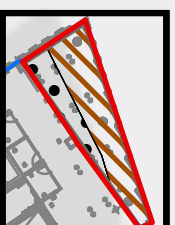


Figure 1 – Pre-development Plans



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



Brill Pl



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-  Application boundary
-  Mitigation area
-  Ownership boundary
-  Bare ground
-  Hard standing
-  Brown roof

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Rev	Description	By	CB	Date



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Client **Francis Crick Institute**

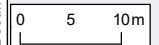
Project **Midlands Road End Level 5 Terrace**

Title **Phase 1 Habitats**

Status	Drawn By	PM/Checked By
Draft	RN	HK
Project Number	Scale @ A3	Date Created
ECO01628	1:750	03/09/21
Figure Number		Rev
3.2		-

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Document: \\SOU-LH-FS-011\Env\Planning\Projects\Current Projects\B ECO01628 Midlands Road End\Tech\Drawings\1628_003_01 (Phase 1).mxd



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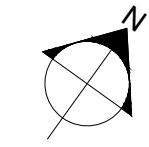


Figure 2 – Post-development Plans

PLANT SPECIFICATION NOTES

All planters to have 100mm depth of clean angular stone drainage layer with imported topsoils above to 600mm depths. Topsoils to be from an approved source, in accordance with BS 3882:2015 and be classified as Multi Purpose. Topsoil shall under no circumstances become contaminated by other materials. Planting areas to be cultivated and prepared using ameliorants including Enmag slow release fertiliser or similar approved, applied in accordance with manufacturers recommendations to leave a friable and free draining material free from large stones, debris and other detritus for the full planting depth.

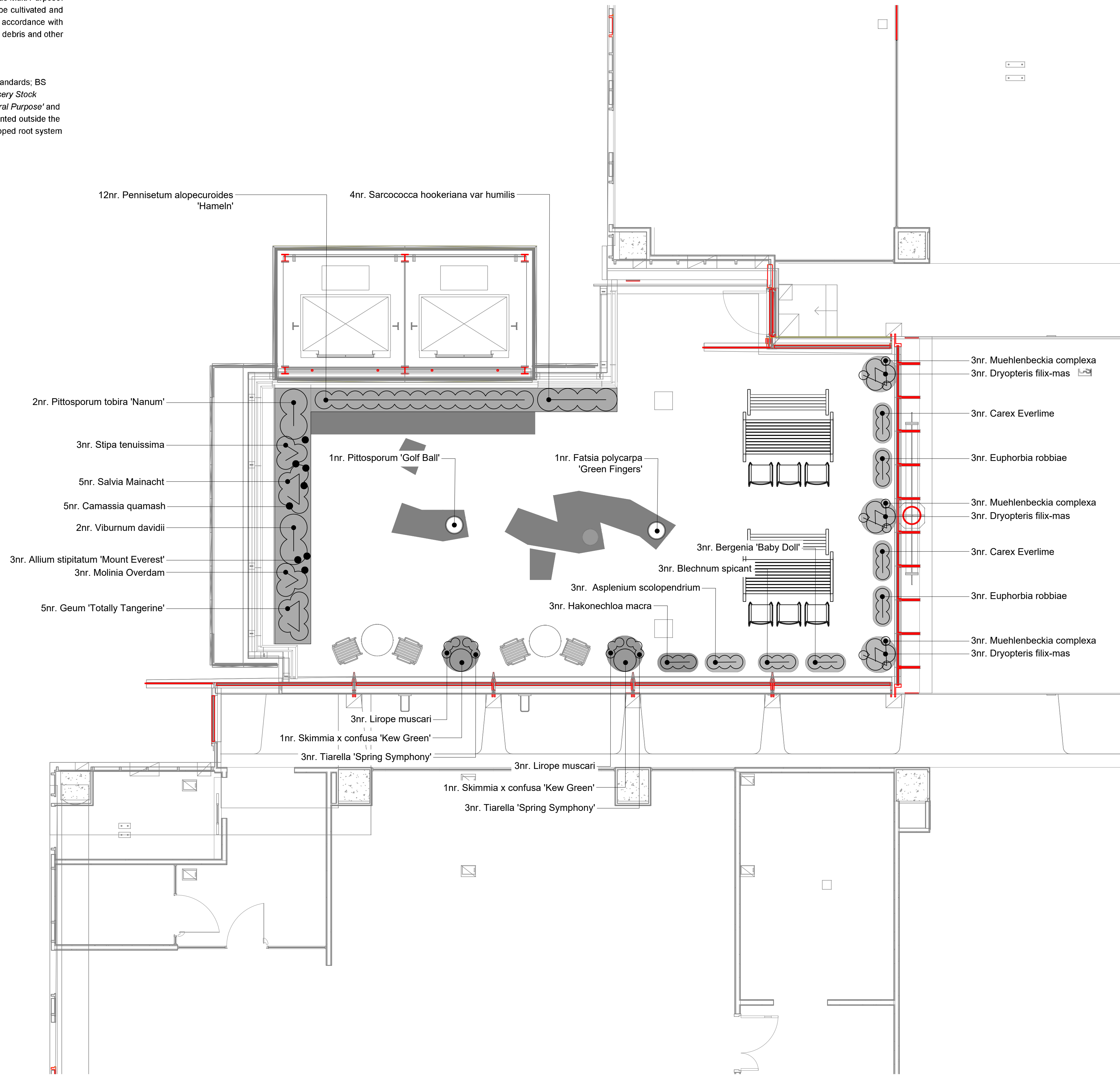
All plant material to be in accordance with the specified Plant Schedule and the following industry standards; BS 3936 Part 1 (1992), 'Nursery Stock Specification for Trees and Shrubs', BS3936 Part 10: 1990 'Nursery Stock Specification for Ground-cover Plants', BS3969 1998+A1:2013 'Recommendations for Turf for General Purpose' and 'Handling and Establishing Landscape Plants' HTA 1985, revised edition March 2002. Any stock planted outside the recognised planting season shall be containerised. Containerised plant stock shall have fully developed root system within the specified pot size.



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KEY

- PLANTING DIVISIONS
- SEASONAL BULBS



PLANT SCHEDULE

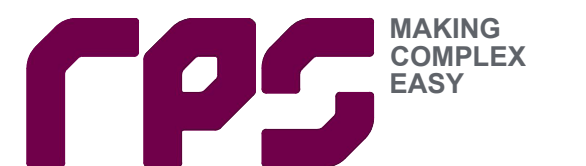
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ORNAMENTAL PLANTING

Plant Name	Planting Method	Quantity	Notes
Ornamental Grasses			
Carex Everlime	Clump	3L	
Hakonechloa macra	Clump	3L	
Molinia Overdam	Clump	3L	
Pennisetum alopecuroides 'Hameln'	Clump	3L	
Stipa tenuissima	Clump	3L	
Herbaceous			
Bergenia 'Baby Doll'	Clump	3L	
Euphorbia robbiae	Clump	3L	
Geum 'Totally Tangerine'	Clump	3L	
Liriope muscari	Clump	3L	
Muehlenbeckia complexa	Clump	3L	
Salvia Mainacht	Clump	3L	
Tiarella 'Spring Symphony'	Clump	3L	
Shrubs			
Asplenium scolopendrium	Clump	3L	
Blechnum spicant	Clump	3L	
Dryopteris filix-mas	Clump	3L	
Fatsia polycarpa 'Green Fingers'	40-60cm	7.5L	
Pittosporum tenuifolium 'Golf Ball'	40-60cm	7.5L	
Pittosporum tobira 'Nanum'	40-60cm	7.5L	
Sarcococca hookeriana var humilis	20-30cm	5L	
Skimmia x confusa 'Kew Green'	40-60cm	7.5L	
Viburnum davidii	40-60cm	7.5L	
Bulbs			
Allium stipitatum 'Mount Everest'	Grade 12+	BI	
Camassia quamash		BI	

Any alterations to species, stock sizes or planting densities shall only be with prior consent of the CA /

Rev	Description	By	CB	Date



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Client **The Francis Crick Institute**

Project **Level 2 Terrace**

Title **Planting Plan**

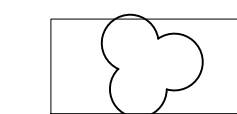
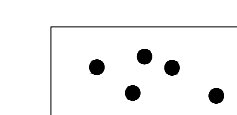
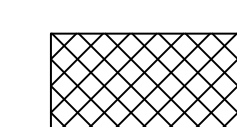
Status **Approval** Drawn By **NJ** PM/Checked by **CT**

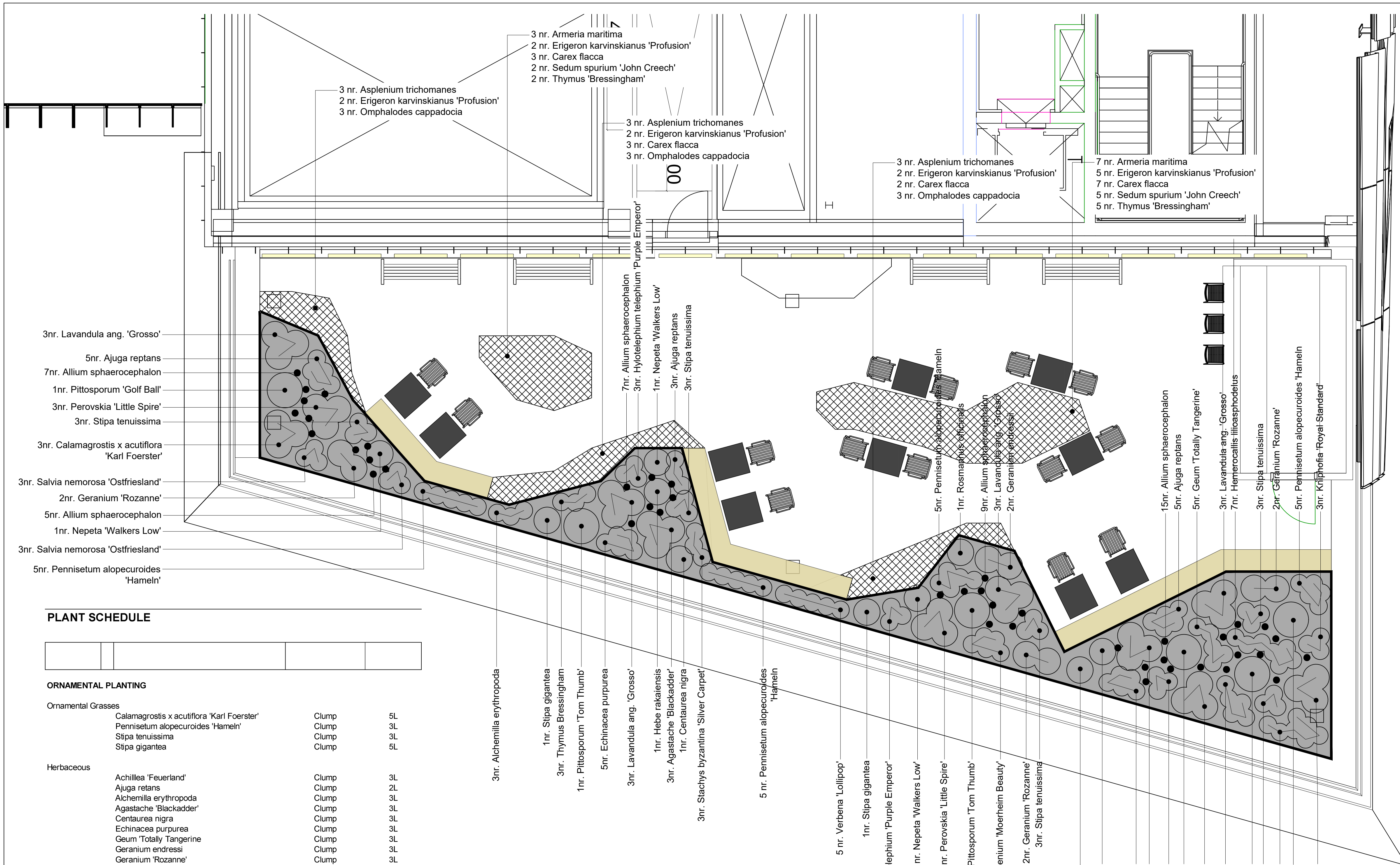
Job Ref **JSL3923** Scale @ A1 **1:50** Date Created **Jan. 2022**

RPS Drawing / Figure Number **002** Rev **-**

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KEY

-  PLANTING DIVISIONS
-  SEASONAL BULBS
-  GROUND FLORA MIX



PLANT SCHEDULE

Plant Name	Quantity	Plant Size	Plant Type

ORNAMENTAL PLANTING

Plant Name	Quantity	Plant Size	Plant Type
Ornamental Grasses			
Calamagrostis x acutiflora 'Karl Foerster'	Clump	5L	
Pennisetum alopecuroides 'Hameln'	Clump	3L	
Stipa tenuissima	Clump	3L	
Stipa gigantea	Clump	5L	
Herbaceous			
Achillea 'Feuerland'	Clump	3L	
Ajuga reptans	Clump	2L	
Alchemilla erythropoda	Clump	3L	
Agastache 'Blackadder'	Clump	3L	
Centaurea nigra	Clump	3L	
Echinacea purpurea	Clump	3L	
Geum 'Totally Tangerine'	Clump	3L	
Geranium endressi	Clump	3L	
Geranium 'Rozanne'	Clump	3L	
Helenium 'Moerheim Beauty'	Clump	3L	
Hemerocallis lilioasphodelus	Clump	3L	
Hyloleplidium telephium 'Purple Emperor'	Clump	3L	
Kniphofia 'Royal Standard'	Clump	3L	
Nepeta 'Walkers Low'	Clump	3L	
Perovskia 'Little Spire'	Clump	3L	
Salvia nemorosa 'Ostfriesland'	Clump	3L	
Stachys byzantina 'Silver Carpet'	Clump	3L	
Verbena 'Lollipop'	Clump	3L	
Shrubs			
Agapanthus 'Midnight Star'	Clump	3L	
Hebe rakiensis	30-40cm	7.5L	
Kniphofia 'Brimstone'	30-40cm	5L	
Lavandula angustifolia 'Grosso'	30-40cm	5L	
Pittosporum tenuifolium 'Golf Ball'	40-60cm	7.5L	
Pittosporum tenuifolium 'Tom Thumb'	40-60cm	7.5L	
Rosmarinus prostrata	20-30cm	3L	
Thymus Bressingham	Clump	1L	
Bulbs			
Allium sphaerocephalon	Grade 12/+	Bl	
Groundflora mix			
Asplenium trichomanes	Clump	1L	
Carex flacca	Clump	1L	
Erigeron karvinskianus 'Profusion'	Clump	1L	
Omphalodes cappadocia	Clump	1L	
Sedum spurium 'John Creech'	Clump	1L	
Thymus Bressingham	Clump	1L	

PLANT SPECIFICATION NOTES

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All plant material to be in accordance with the specified Plant Schedule and the following industry standards; BS 3936 Part 1 (1992), 'Nursery Stock Specification for Trees and Shrubs', BS3936 Part 10: 1990 'Nursery Stock Specification for Ground-cover Plants', BS3969 1998+A1:2013 'Recommendations for Turf for General Purpose' and 'Handling and Establishing Landscape Plants' HTA 1985, revised edition March 2002. Any stock planted outside the recognised planting season shall be containerised. Containerised plant stock shall have fully developed root system within the specified pot size.

Any alterations to species, stock sizes or planting densities shall only be with prior consent of the CA / LA

Rev	Description	By	CB	Date



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Client **The Francis Crick Institute**

Project **Level 5 Terrace**

Title **Planting Plan**

Status **Approval** Drawn By **NJ** PM/Checked by **CT**

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